

## About Internet & e-mail

### What is Internet?

Internet can be compared with a library. Like a library, the Internet is also a source of enjoyable, important and varied information that can be obtained and used by millions of people across the world.

The Internet also, like our library contains different forms, like text sound and graphics. Super library does not allow just anybody to browse books or cassettes; this facility is available only for authorized members of the library. In a similar way only authorized users of the Internet can access it to obtain information.



Internet is a worldwide collection of computer networks. Internet is a cooperative effort of many people and organizations. The computers on the Internet can communicate because they are physically linked and because they share a common language called **TCP-IP**.

**Protocol:** Is a formal definition of a language that two computers use to communicate. This definition describes acceptable messages and outlines the rules that two computers must follow to exchange those messages.

**Transmission Control Protocol:** Is the major transport protocol in the Internet Protocol suite. It provides reliable communication between two computers in the network.

**Internet protocol:** It is the network protocol in the Internet. IP provides a best effort to deliver an IP packet between two networks on the Internet.

Internet is also known as cloud or the information super highway. When you access the Internet, you become the part of the electronic community that encompasses most of the work. The Internet community includes several million people. Vast libraries advanced medical and technical research centers, and thousands of business large and small.

### **Birth of Internet?**

The INTERNET was born in 1969, when a paranoid American military had nightmares about the primary communication centers being bombed out by Russians. To prevent such occurrence, the ARPA (Advanced Research Projects Agency) set up four communication hosts, linking them in such a fashion which would ensure that even if one got bombed out. Communication would route around the affected area and stay alive.

This network called ARPA net quickly grew. This primary service on ARPA net was electronic mail. It was the first time that emails actually came into use. In very short time, students began linking their own campus networks into ARPA net, using a well defined protocol TCP-IP. This joining of networks was also called inter-networking, and soon the entire setup was called INTERNET.

In 1973, ARPA net allowed international bodies to the net, and after that there was no looking back.

### **Who owns the Internet?**

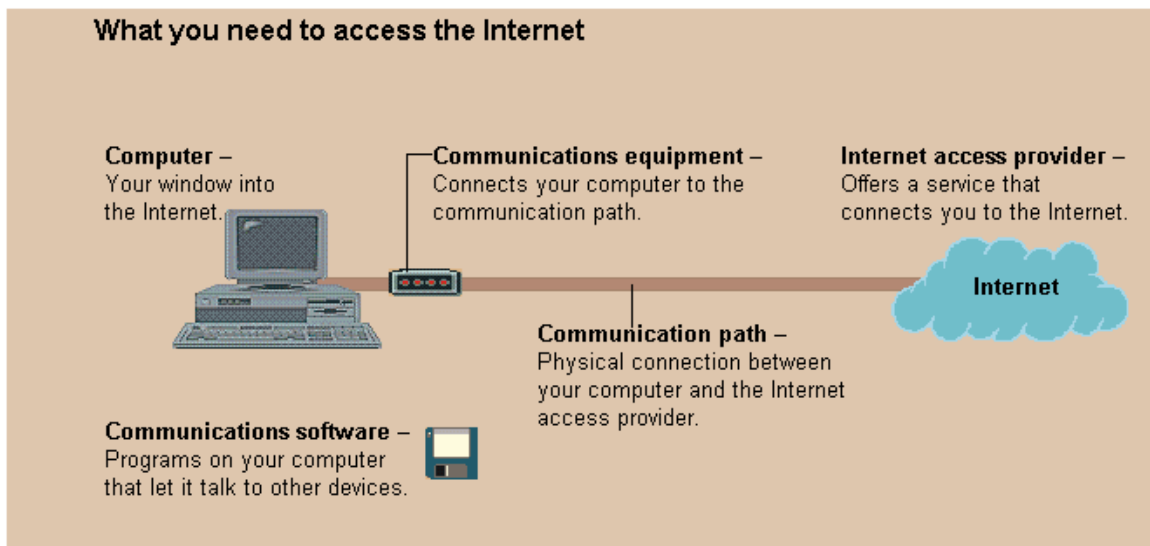
No one person, service, corporation, university or Government owns the Internet. Each connected individual or group owns its own network.

Each person who desires telephone service contacts the local area service provider. The service provider provides the hook-up from the residence or business to service network. The Internet mostly connects

network of computers. The Internet is also called as the Global Internet because networks from most of the countries with some sort of telephone service infrastructure is connected to it. Practically this means people can use their computers on their local networks to messages or exchange files with people using in another company or in another state, geographic region, or another country.

## How does the Internet actually work?

The Internet is like a vast transportation system for data. The system includes and connects local, regional, nation and international networks. This Internet expands daily as more networks and computers connect to it.



Let's say that a person in Hyderabad wants to get information from another person in Tokyo, Japan. Now if these two people are in the same company, using some corporate wide e-mail system, the first person just enters in the name of the second person as it is known to the corporate e-mail system- usually, a user name. This server as an address on the electronic message, and the send command has the e-mail system deliver the message to the second person.

In the Internet community, people believe in sharing their ideas and opinions with others. This is so mainly because it is an open forum that has government and no restrictions at all. This policy of openness has led Internet-citizens to put up an enormous variety of hypertext document on the web. This has led to information of every kind being available to any body who wants it.

## **Some uses of Internet**

- Looking for jobs
- Learning a foreign language
- Making friends from any part of the world
- Participating in a discussion about your favorite TV show with similar minded people across the world,
- Send to a friend, an electronic birthday card that actually says 'happy birthday to you'
- Go through the catalogue of a library situated across the globe and find a book you always wanted to read
- See the latest photographs of your movie stars.
- Download some interesting software and try it out.
- Make your own home page, which talks about yourself, your family, your pets and your hobbies.
- Chat with a friend working abroad and see him as you talk.

## **From home you can use Internet for following activities**

- To exchange email with friends and family
- To participate in group discussions through public news groups or bulletin board
- To find educational tools around the world, access libraries, book stores etc.
- For entertainment
- To do shopping
- Leisure activities

## **For business the Internet is invaluable:**

- Get technical support for products
- Distribute software
- Provide technical support, bug fixes, product information to customers etc.
- Publish information on any topic
- Communicate or collaborate on projects
- Market or sell products
- Access business while at home
- These services can be availed round the clock from anywhere in the world.
- At any given point of time, up-to-date information can be obtained.

Not only is the Internet leading to a 'Information superhighway' but is dramatically altering the way corporations do business. e-money and e-commerce are offshoot of the Internet. The areas of application are limitless and the Internet is changing the way we think and live.

## **Names and numbers on the Internet**

On the Internet are so many computers are connected. There are two ways to identify a computer. One by names other by number. Each machine on the net called a host has a number assigned to it to other hosts, sort of like a phone number. The numbers are in four parts such as 123.45.67.89

Most host also have names, which are much easier to remember than numbers. The names have multiple parts and are separated by dots. i.e. "username@hotmail.com."

## **Domain Categories**

- .com for commercial organizations
- .edu for educational institutions
- .gov for government agencies
- .mil for military installations
- .net for network access provider
- .org for non-profit organizations.

## **Who pays for the Internet?**

The bill for the Internet does not go to the single government private entity. Rather, organization and individuals pay for the connections, based on the volume and type of access they require.

Regional providers access the Internet by buying a connection from a national provider or paying for access to backbone network.

## **Introduction to World Wide Web**

The World Wide Web is an information retrieval system based on hypertext. In hypertext selected words or areas on the screen are expandable, leading to more details about subject. A hypertext allows you to view information without using complex commands and without even using source of information. When a hyperlink is attached to text it is called hypertext.

A browser is a client application used to access the information on www. The browser displays web pages and makes the connection necessary to follow hypertext links.

www is a global hypertext system that uses the Internet as its transmission medium.

The www enables you to access information on the Internet without the use of complicated commands. By linking resources throughout the Internet, the web brings a world of information to your doorstep.

The www could be very simply defined as a universal database of knowledge. Information that is easily accessible to people around the world and links easily to other pieces of information. This allows any user to quickly find the things most important to themselves. It is an Internet resource where one can get information about different topics such as the latest trends in programming language.

### **Origins of the World Wide Web**

Like many Internet technologies, the WWW has its origins in the research community. The Web is based on HTTP, the Hypertext Transfer Protocol, which was developed at CERN, the European Laboratory for Particle Physics in Switzerland. Web technology developed originally to help researchers access information and share their work via the Internet.

Prior to the development of the web, researchers at CERN had to use a variety of operating systems and programs to access information. The web provided them with a single mechanism for information retrieval, regardless of the type of computer and the type of resource. After CERN established specifications for the web, software for web services and clients developed quickly on the Internet.

Today there are thousands of web servers throughout the world. Web browsers, who are available for just about every type of computer made enable millions of people to use the www.

The two main uses of the World Wide Web are to retrieve resources and to publish information on the Internet. You can access almost any Internet resource using the www. You can publish your own hypertext documents on the World Wide Web. Web documents are written in HTML. HTML editors and file converters are available to simplify the

task of creating documents that contain embedded links to other information.

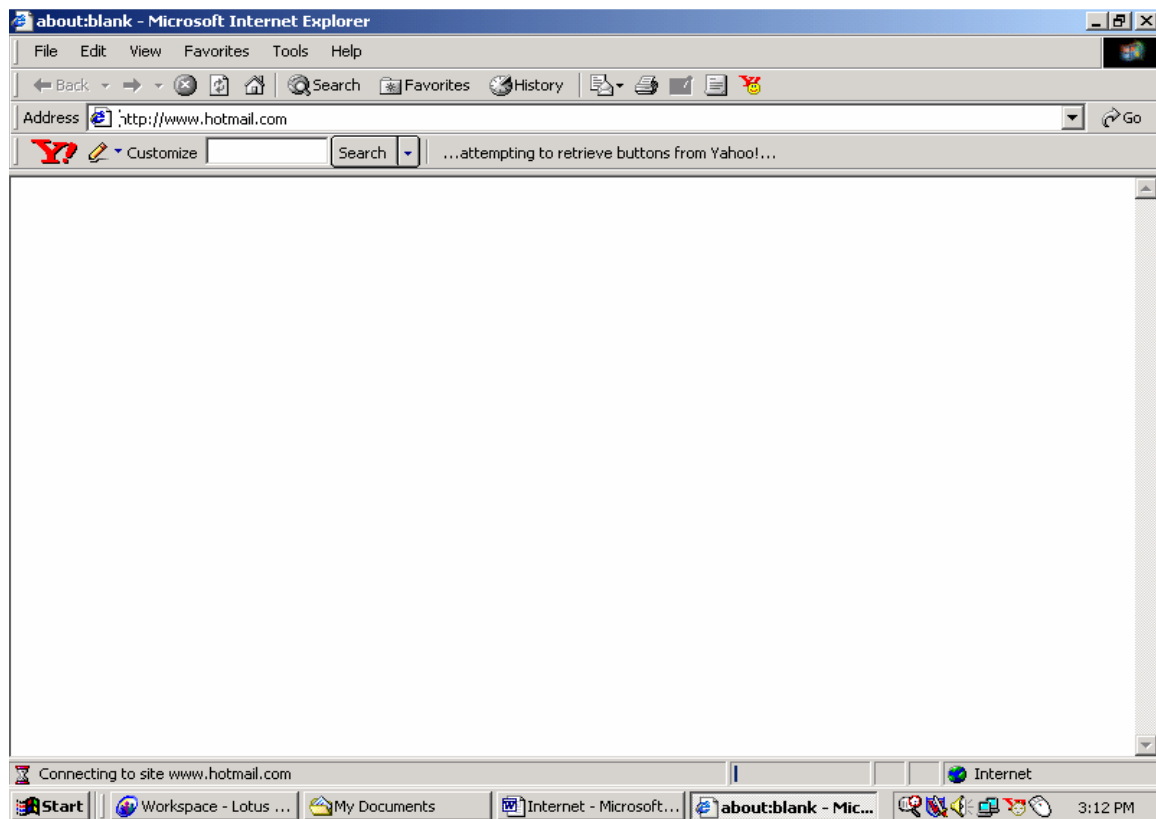
## **WWW Gateways to other services**

Through the www you have access, not just to web hypertext documents or pages, but also to other Internet resources. The web connects directly to some of these resources.

A gate way is a link between two systems that perform a similar function but work differently. The gateway translates addresses and protocols between two systems so that they can work together.

## **Introduction to URL's**

Every web page or Internet resource accessible through the www has a unique name, this is URL (Uniform Resource Locator). The URL identifies and locates a resource so that a web browser can access it directly. A URL is type of Internet address.



The language that Web clients and servers use to communicate with each other is called the Hyper Text Transfer Protocol (http). All the web clients and servers must be able to speak http in order to send and receive hypermedia documents. For this reason web servers are often called http servers.

### **File Transfer Protocol (FTP)**

File Transfer Protocol is a method of transferring files from one computer to another. A protocol is a rule or set of rules that have to be followed by both the client and the server computers so that communication can take place between them. It is the same in case of FTP, the computer that is requesting for a file is the FTP client, while the computer, which services the request, is the FTP server and both of them follow the FTP protocol. Advantages of FTP are Speed, Cost and Choice.

### **Methods of communication**

From electronic mail messages to world wide discussion groups, communicating with others is the most popular use of the Internet. The Internet offers electronic versions of familiar types of communication including Mail, Discussion groups, Telephone conversations, Radio programs, and teleconferencing.

### **Introduction to e-mails**

A hundred years ago a message took 7 days to travel from coast to coast and even longer to cross the ocean. With the advent of airmail, that time was cut to 3 or 4 days. Today overnight mail delivery is available in certain areas, for a hefty surcharge. But faxing and electronic mail provide faster and inexpensive delivery of messages.



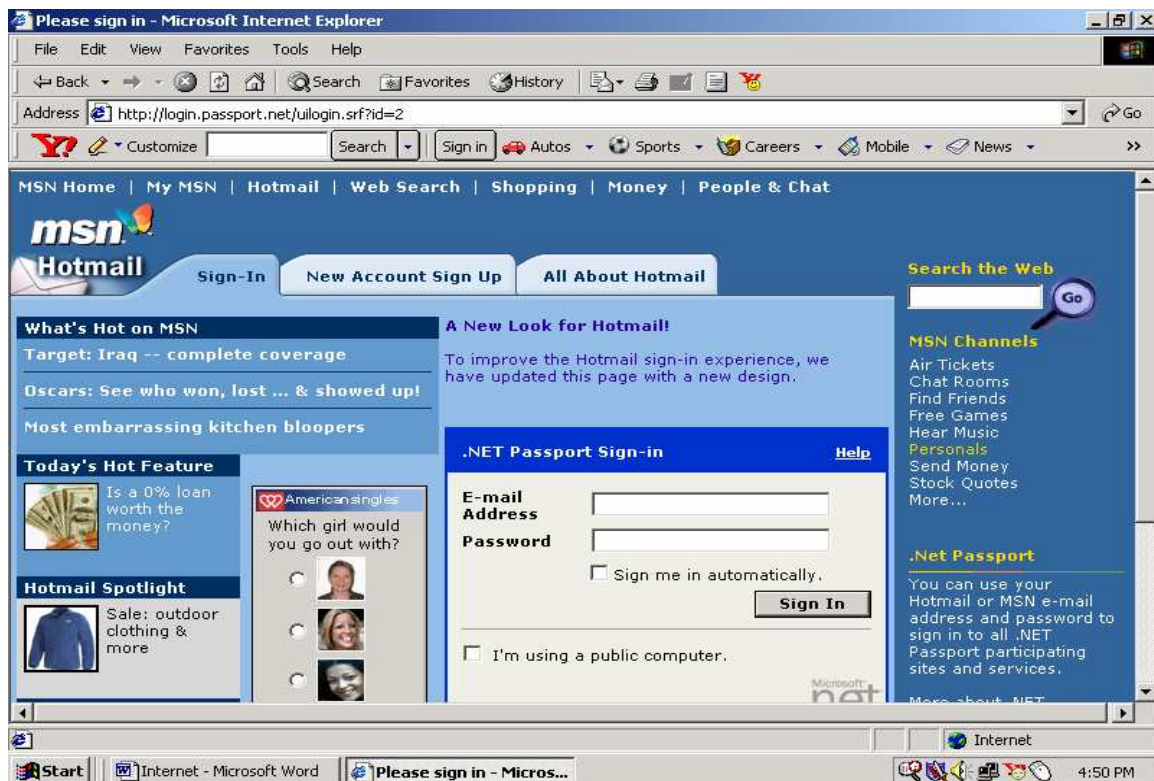
## How e-mail works

The way electronic mail works on the Internet is similar to the way the postal system works. The **address** is the most important part of both standard letters and e-mail messages. If the address is incorrect the intended recipient will never see the message.

Issuing a **send** command at your computer is similar to placing your letter in a mailbox. Once you've sent your message on its way, you cannot retract it.

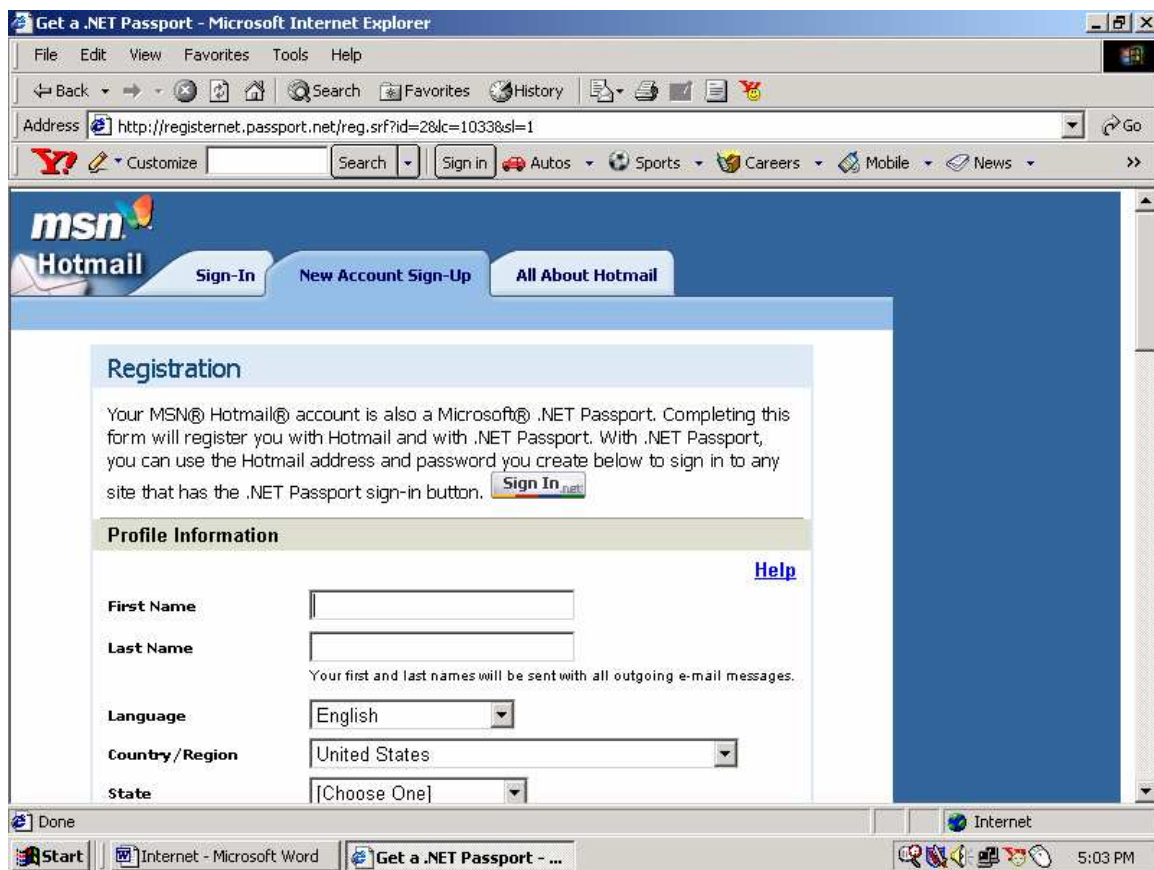
The postal service collects mail and takes it to the local post office for processing and routing. When you send electronic mail, your local post office reads the e-mail address and either delivers the message to another local mail account or sends it to the Internet.

As your letter travels from one post office to another, the postal service routes it based on the address, so that it continues to move closer to its destination.



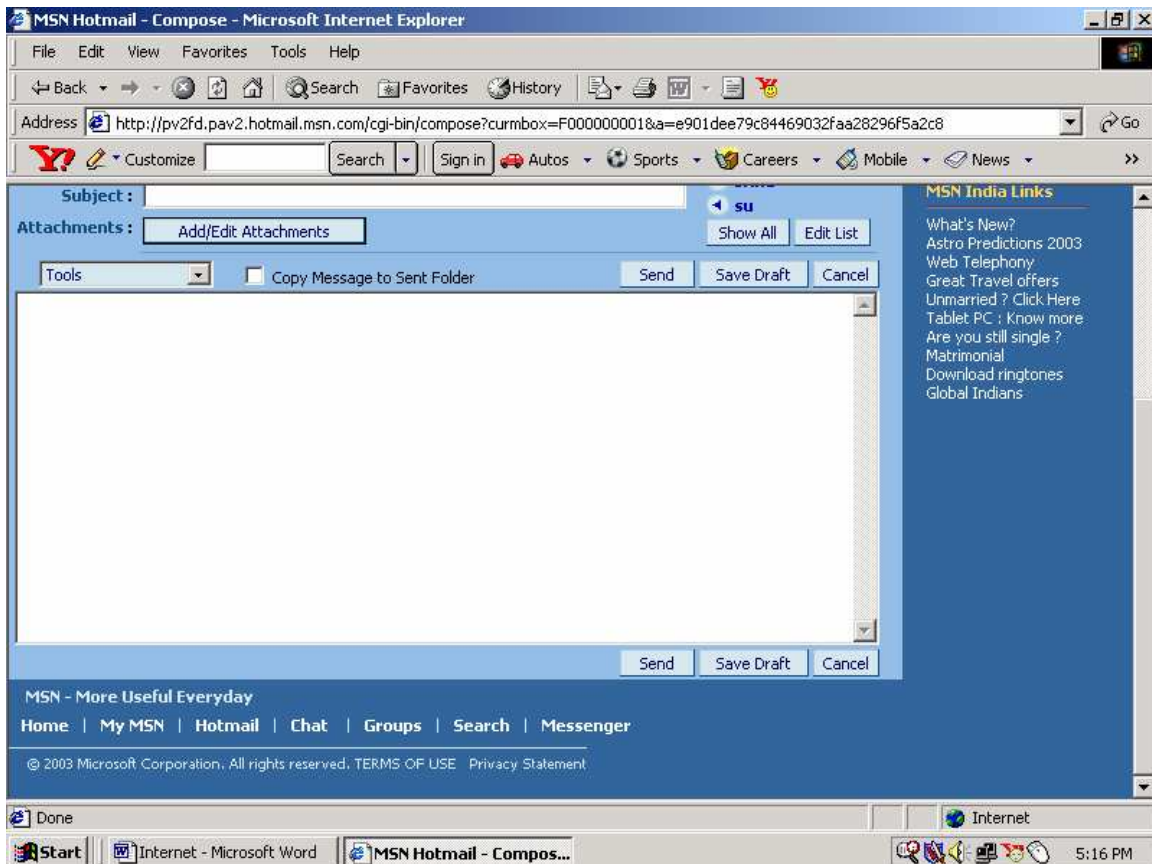
Your e-mail message passes through several computers, known as routers, on its way to the recipient. A router is a device that serves as a gateway between networks. It routes data by matching the destination address in the data to network topology information and routing tables. Often, a router connects a LAN to the Internet.

Postal mail goes from the local post office to the recipient's mailbox. The e-mail recipient's local post office system receiver the message. Both postal letters and e-mail messages remain in the mailbox until the recipient checks for new mail.



A major difference between electronic and postal mail is that e-mail is significantly faster. Depending on how often the mail systems handling the message check for new mail and how much Internet traffic there is, your e-mail message can arrive in as short a time as thirty seconds as it might take as long as a day. But it certainly takes a less time than postal mail.

e-mail is a service for exchange for exchanging messages among computers. Many commercial online services are corporations also provide e-mail exchanges via the Internet.



When you send an e-mail the local post office reads the e-mail address and either delivers the message to the local mail account or sends it to the Internet. Your e-mail message passes through several computers known as routers, on its way to the recipient.

## **Internet Service Provider**

An Internet service provider is an organization that maintains a high speed network of cables connected to the Internet. This organization usually owns more than one powerful computer that is directly connected to the network forming the Internet.

## **Browsing**

The process of navigating among the document is called browsing. The users need to have client software (web browser) such as Netscape navigator to actually retrieve and browse the information on the www. www supports many kinds of documents such as text, pictures, video and audio. Sometimes it is referred to as net surfing.

## **Browser**

It is basically a program that runs on an Internet connected computer and provides access to www resources.

## **Client**

The computer that is requesting for some service from another computer is called the client.

## **Web Server**

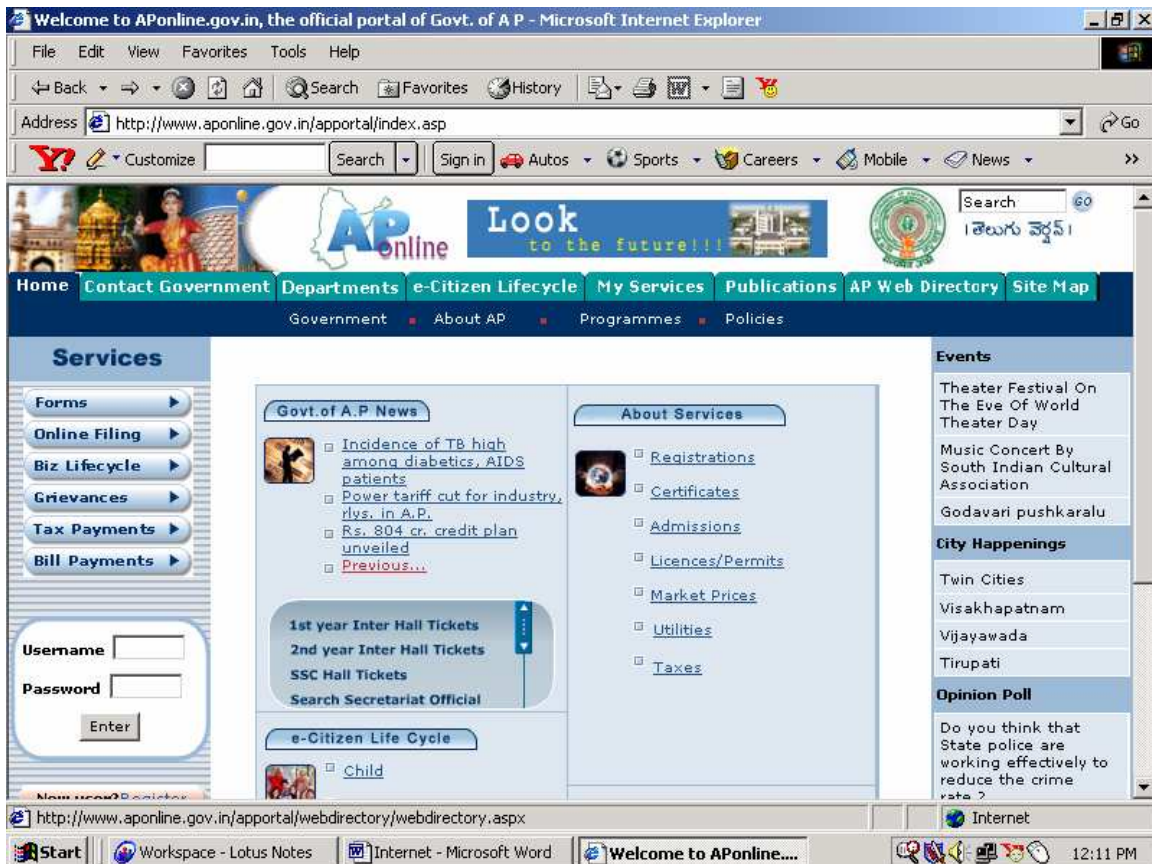
A web browser is a program that accepts requests for information framed according to the hypertext transport protocol (http). The server processes these requests and sends the requested document. When you access a www server, the document is transferred to your computer and then the connection is terminated. This reduces network traffic by not having to hold on to a line, which you read a document.

## **Hyper Text Markup Language (HTML)**

A markup language is a set of formatting codes that affects that the way preset information will be displayed. It is used to create Hypertext Markup Language (HTML) documents. It is not a programming language. Only the presentation – but not the contents. The information remains static all the documents that you view on the www are created using HTML.

## **Home Page**

Home page is the document that servers as the initial point of entry to a web of related documents. It contains introductory information, hyperlinks to related resources and navigation buttons to help users find their way among the various documents.



## Hyperlink

A hyperlink allows you to view information without using complex commands and without even knowing the source of the information. A hyperlink includes within it all the information needed to retrieve information or connect to a specific Internet resource. Much of the excitement about the World Wide Web is due to its extensive use of hyperlinks.

## Hypertext

When a hyperlink is attached to text, it is called hypertext. Hypertext is a method of preparing and publishing text in which users can choose their own paths for the material. The text is broken into small units such as single pages called nodes. Then hyperlinks are embedded into the text. Typically the users have a GUI on which he clicks a button to navigate through the different pages.

## **Web**

A collection of documents inter-linked by hyperlinks is called web. A web page is synonymous with web documents. It is not the same as a page on your screen. It is also defined a hypertext information system.

## **Future of Internet**

Just the television and the automobile, the Internet will revolutionize all aspects of everyday life. Geographic boundaries will fade and with them, the distance that separates people. Location will no longer be advantage or a disadvantage. Amenities and services now common only in large cities will available to everyone.

As the Internet continues to evolve, it will change the way we live and work. Communities will be based on something other than geographic proximity. We need to define the role of government in an electronic world physical border. While no one knows exactly what the future will bring, the Internet is sure an important role in it.

The Internet is growing rapidly; with hundreds of thousands of new users getting online each month through Commercial online Services and Internet access providers.

The Internet infrastructure is also growing rapidly. Every 30 minutes, a new network is connected to the Internet. In the future, each person may be associated with hundreds or even thousands of online devices.

The Internet's exponential growth presents extreme technological challenges, as network engineers struggle to keep up with demand.

Today, most people will program their VCRs, start dinner cooking in the microwave, and activate burglar alarms from anywhere in the world via the Internet. Every day, entrepreneurs announce new Internet application, from innovative information gathering services to voice messaging and videoconferencing. The Internet opens up a whole way of communicating and doing business. The applications are limited only by our imaginations. Here are just some of the ways that may be used.

As the Internet more commercialized, new opportunities will arise for both businesses and consumers. Today, many businesses are beginning to advertise on the Internet. In the future, the Internet may

well be the place to do business. We'll be able to shop for homes across the country from the comfort of our living rooms and text drive a car while seated at our desks.

Users on the Internet can chat and exchange information with others around the world.

As information flows freely between countries national boundaries are beginning to dissolve. Automatic translation is breaking down language barriers. Businesses are competing in a whole new global economy. Internet virtual communities bring tighter like-minded people from around the world.

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